

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

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NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

16.04.2004

Applicant's or agent's file reference  
PXWO00001/03

## IMPORTANT NOTIFICATION

International application No.  
PCT/ES 03/00009

International filing date (day/month/year)  
10.01.2003

Priority date (day/month/year)  
14.01.2002

Applicant

BRAKE PLUS, S.L. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

## 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Rec'd PCT/PTO 14 JUL 2004



REC'D 19 APR 2004

WIPO PCT

Applicant's or agent's file reference PXWO00001/03	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/ES 03/00009	International filing date (day/month/year) 10.01.2003	Priority date (day/month/year) 14.01.2002
International Patent Classification (IPC) or both national classification and IPC G07D7/12		
Applicant BRAKE PLUS, S.L. et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of 2 sheets.

- This report contains indications relating to the following items:
  - ☒ Basis of the opinion
  - ☐ Priority
  - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Lack of unity of invention
  - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Certain documents cited
  - ☐ Certain defects in the international application
  - ☐ Certain observations on the international application

Date of submission of the demand  12.08.2003	Date of completion of this report  16.04.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Lavin Liermo, J  Telephone No. +49 89 2399-2289  

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/ES 03/00009

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, Pages

1-7 as originally filed

### Claims, Numbers

1-13 received on 09.03.2004 with letter of 05.03.2004

### Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	1-13
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1). Reference is made to the following document:

D1: EP-A-1158459

2). The set of claims fulfil the requirements of Art. 34(2)(b) EPC (see original claims 4, 7, and original description page 4 lines 6-18).

3). D1 discloses a system for recognizing documents provided with a security mark ([001] "security markings.....and of documents...carrying such security markings...marking and authenticating them") comprising a substance which is excitable when a light coming from a corresponding light source is emitted on it ([0017] "luminescence emission function of a probe marking following pulse excitation...After excitation with an appropriate excitation pulse.....the luminescent material emits part of the absorbed energy in the form of emission radiation of a second wavelength"), the system comprising

a monochromatic light source (2, 3) for exciting the substance ([0047] "a laser current driver 2 controlled by...a 980 nm wavelength pulse laser diode as excitation source 3"); and

each detector assembly being associated to a system for electronic processing. defined by a filter and an amplifier, connected to a single microprocessor (Figure 3).

The following features are not disclosed in claim 1,

(dif 1) at least two detector assemblies for detecting light emitted by the excitable substance of the security mark of the document to be

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recognized;

- (dif 2) each detector assembly being integrated in a body that groups together all the detector assemblies for detecting the light emitted by the excitable substance of the security mark, said detector assemblies being directed towards a common point, in order that the intensities of the light emitted by the mark, at different wavelengths, be detected by the detector assemblies,
- (dif 3) the microprocessor being arranged to analyze the detected light intensities at different wavelengths comparing them with a set of values stored in a memory of the microprocessor, for the purpose of determining whether the document recognized is an authentic document or a counterfeit document.

The problem to be solved by the features (dif 2- dif 3) can be formulated as :

how to recognize whether a document having a security mark is genuine or not ?

The solution provided to the skilled person in the prior art is that a monochromatic source emits light, said light is emitted at one predetermined wavelength/frequency, and the light emitted by the substance of the security mark is received by a light detector. The received intensity is analyzed.

However the prior art does not supply any reference do analyze the non-linear behaviour of a security mark for determining whether the document is genuine or not, that means there is no hint in the prior art that several wavelengths created from a monochromatic light source are analyzed.

The advantage of this system is that it makes almost impossible to counterfeit the substance of the security mark, because the non linear behaviour of a substance is very difficult to imitate.-----  
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CLAIMS

1.- A system for recognizing documents provided with a security mark comprising a substance which is excitable when a light coming from a corresponding light source is emitted on it so as to emit light at different wavelengths, the system  
5 comprising

a monochromatic light source for exciting the substance; and

at least two detector assemblies (3) for detecting light emitted by the excitable substance of the security mark of the document to be recognized;

each detector assembly (3) being associated to a system for electronic  
10 processing defined by a filter (7) and an amplifier (8), connected to a single microprocessor;

each detector assembly (3) being integrated in a body (9) that groups together all the detector assemblies (3) for detecting the light emitted by the excitable substance of the security mark, said detector assemblies being directed towards a common point,  
15 in order that the intensities of the light emitted by the mark, at different wavelengths ( $\lambda_1$ - $\lambda_9$ ), be detected by the detector assemblies, the microprocessor being arranged to analyze the detected light intensities at different wavelengths comparing them with a set of values stored in a memory of the microprocessor, for the purpose of determining whether the document recognized is an authentic document or a counterfeit document.

20 2.- A system according to claim 1, wherein the light source comprises a diode laser (1) of small dimensions and with focused light, so that all of the light output is at a narrow wavelength and at one point.

3.- A system according to claim 1 or 2, wherein each detector assembly (3) is defined by a photodiode (4), a filter (5) and a lens (6), duly encapsulated.

25 4.- A system according to claim 3, wherein the filters (5) are selected so that different detector assemblies (3) detect the intensity of light corresponding to different wavelengths ( $\lambda_1$ - $\lambda_9$ ).

5.- A system according to any of the preceding claims, wherein the elements forming part of the system are arranged so that the detection path length is very short, whereby a better optical tolerance with regard to the banknote pass distance, and a  
30 small-sized and low cost equipment, are obtained.

6.- A system according to any of the preceding claims, wherein the system incorporates a presence detector determining the placement of the security mark on the document to be recognized.

35 7.- A system according to any of the preceding claims, wherein the light source

is provided with a filter for achieving the necessary monochromatic character.

8.- A system according to any of the preceding claims, wherein the light source comprises a diode laser.

5 9.- A system according to claim 8, wherein the diode laser is a modulated frequency diode laser (1).

10 10.- A system according to any of the preceding claim, the system being arranged to analyze relative intensities of light emitted by the excitable substance at different wavelengths ( $\lambda_1$ - $\lambda_9$ ) detected by the respective detector assemblies (3), the wavelengths being determined by the respective filters (5) integrated in the respective detector assemblies.

15 11.- A system according to any of the preceding claims, the system being arranged to determine, with the definition of a threshold, the existence or non-existence of emission of light by the excitable substance, at different wavelengths ( $\lambda_1$ - $\lambda_9$ ) detected by the respective detector assemblies (3), the wavelengths being determined by the respective filters (5) integrated in the respective detector assemblies.

12.- A system for recognizing documents according to any of the preceding claims, wherein the detector assemblies (3) are arranged for detecting light emitted, by reflection, by the excitable substance of the security mark.

20 13.- A system for recognizing documents according to any of claims 1-11, wherein the detector assemblies (3) are arranged for detecting light emitted, by transmission, by the substance of the security mark.